ABSTRACT OF THE DISCLOSURE

A technique decomposes a multicast transaction issued by one of a plurality of nodes of a distributed shared memory multiprocessor system into a series of multicast packets, each of which may further "spawn" multicast messages directed to a subset of the nodes. A central switch fabric interconnects the nodes, each of which includes a global port coupled to the switch, a plurality of processors and memory. The central switch includes a central ordering point that maintains an order of packets issued by, e.g., a source processor of a remote node when requesting data resident in a memory of a home node. The multicast messages spawned from a multicast packet passing the central ordering point are generated according to multicast decomposition and ordering rules of the inventive technique.